PROJECT LEVEL AIR QUALITY SCREENING, ANALYSIS, AND DOCUMENTATION FOR ROADWAY PROJECTS IN IDAHO
EFFECTIVE: SEPTEMBER 4, 2001

INTRODUCTION

Transportation projects can create localized impacts on air quality through the changes they introduce to the volume, location and character of motor vehicle traffic. The frequency and magnitude of these impacts, which manifest themselves as health risks and a general decreased quality of life, can be identified through monitoring and projected through modeling.

It is the responsibility of the Idaho Transportation Department (ITD) to satisfactorily identify and assess the potential impacts of all federally funded highway transportation projects in the State of Idaho. Similarly, it is the responsibility of the Federal Highway Administration (FHWA) to assure compliance with applicable laws and regulations. A process flow chart for addressing project level air quality requirements on all Federally funded highway transportation projects in Idaho is provided in **Attachment A**.

In consideration of the importance of air quality as an environmental and health issue, and the complexity of this subject from both a regulatory and analysis standpoint, it was determined through discussion between ITD, FHWA and the Idaho Department of Environmental Quality (IDEQ) that the following guidance should be prepared to provide an overview of project level air quality analysis. Specific issues addressed in this guidance document are:

1. Regulatory Basis for Project Level Air Quality Analysis

2. Pollutants of Concern

3. Level of Consideration for Air Quality

4. Screening Guidance

5. Analysis Guidance
   - Emission Factors Modeling (MOBILE5b)
   - Dispersion Modeling (CAL3QHC)

6. Mitigation Considerations

7. Documentation
   - Background Documentation
   - CO Documentation
   - PM_{10} Documentation

REGULATORY BASIS FOR PROJECT LEVEL AIR QUALITY ANALYSIS

Consistent with the National Environmental Policy Act (NEPA) and as further detailed in 23 CFR Part 771, projects using federal-aid funds and/or requiring FHWA approval actions must be evaluated for the potential impacts that such actions will have on the human environment. Included among the elements of the human environment to be considered as part of the evaluation is air quality.

In addition to the NEPA based imperative referenced above, the Federal Clean Air Act (CAA) has established specific procedures and limitations for evaluating transportation projects in designated air quality nonattainment areas. These procedures, generally referred to as the "conformity regulations", are outlined in 42 U.S.C. Part 7401 (et. seq.) and are further detailed in Federal regulations (40 CFR Part 93) and Idaho State Administrative Procedures (IDAPA 58-0101-9902). Though separate from the NEPA process, the conformity regulations likewise require ITD to assess the potential air quality impacts of transportation projects on the human environment.

Two notable differences exist between the project level air quality requirements under NEPA and those under the CAA. First, NEPA applies to Federal projects irrespective of location whereas the CAA applies to projects within specifically

identified areas. Second, NEPA and its implementing regulations provide limited detail on the direction and criteria for conducting project level air quality analyses whereas the CAA and its implementing regulations provide substantial detail. A common element to project level analysis under both NEPA and the CAA is that the seven criteria pollutants of the CAA are applied to both for considering potential air quality issues. The corresponding National Ambient Air Quality Standards (NAAQS) for these pollutants are applied as the criteria for evaluating proposed projects and actions.

POLLUTANTS OF CONCERN

Of the seven Federal criteria pollutants identified in the CAA, the two currently applicable to Idaho transportation projects and programs are carbon monoxide (CO) and particulate matter with an aerodynamic diameter equal to or less than 10 microns (PM_{10}). Within the State of Idaho there are currently five federally designated air quality nonattainment areas for CO and/or PM_{10} as follows:

CO	**Classification**
Northern Ada County Nonattainment Area;	Not Classified

PM_{10}	**Classification**
Portneuf Valley PM_{10} Nonattainment Area (Pocatello);	Moderate
Fort Hall PM_{10} Nonattainment Area (Tribal Lands);	Moderate
City of Pinehurst Nonattainment Area;	Moderate
City of Sandpoint Nonattainment Area;	Moderate

In addition to the above listed areas, the IDEQ has identified the following locations as being air quality areas of concern based on monitoring **(See Attachment B)**:

Coeur d'Alene/Post Falls Urban Area
Lewiston Urban Area
Canyon County
Pocatello Urban Area
Northern Ada County

Characteristics and health effects of CO and PM_{10} are as follows:

CO
CO is an odorless, colorless gas produced from incomplete combustion of carbon fuels and is commonly found in the emissions of smoke stacks and automotive tailpipes. Health effects of CO include reducing the flow of oxygen in the bloodstream, thus making it particularly dangerous to persons with heart disease. Exposure to CO impairs visual perception, manual dexterity, learning ability, and performance of complex tasks.

PM_{10}
PM_{10} is comprised of suspended particles originating from smoke stack and automotive tailpipe emissions as well as from migration and re-entrainment of dust due to wind, automobiles, and other sources of disturbance. Health effects of PM_{10} include irritation and damage to the respiratory system. This can result in difficulty breathing, induce bronchitis and aggravate existing respiratory disease. Exposure to particulates impacts individuals with chronic pulmonary or cardiovascular disease, people with influenza or asthma, children and elderly persons. Particulates aggravate breathing difficulties, damage lung tissue, alter the body's defense against foreign materials, and can lead to premature mortality.

LEVEL OF CONSIDERATION FOR AIR QUALITY

Air quality should be a consideration for all transportation projects. The level of consideration (including analysis and documentation) appropriate for a given project will depend on a number of factors but particularly the air quality status and history of the area, the nature of the project and the projected traffic growth and characteristics.

For Federally designated nonattainment areas, air quality is a priority issue that must be addressed through the NEPA process to satisfy FHWA's NEPA regulations (23 CFR 771), EPA's conformity regulations (40 CFR 93), and Idaho State Administrative Procedures (IDAPA 58-0101-9902). In addition, areas not currently designated as nonattainment but which have been identified by IDEQ as being air quality areas of concern warrant additional attention beyond that reserved for projects in other locations. Finally, projects having characteristics potentially leading to air quality impacts should be given additional attention regardless of their location.

CO emissions attributed to transportation projects are principally the result of tailpipe emissions. Locations of greatest potential for elevated concentrations of CO are intersections, interchanges and other similar sites experiencing particularly high vehicle densities and slow velocities.

PM_{10} emissions attributed to transportation projects are principally the result of re-entrained road dust. Consistent with this, PM_{10} is correlated to the roadway functional classification with lower classification roadways being characterized as having a greater potential for re-entrained dust. Owing to the complex nature of PM_{10} generated from roadways, there is currently no EPA approved project level air quality analysis model or methodology and with that, no formal quantification or analysis of projects for this pollutant.

SCREENING GUIDANCE

The following screening process has been developed for the purpose of identifying highway projects which, based on their type, configuration and projected traffic volume, will not result in emission concentrations approaching or exceeding the NAAQS. Projects satisfying the screening criteria are judged to have no significant adverse air quality impacts and, where applicable, conform to the State Implementation Plan (SIP).

This process and its criteria, as detailed below, apply to all Federally funded transportation projects statewide. Furthermore, it satisfies both the NEPA requirements of 23 CFR Part 771, and the project level conformity requirements detailed in 40 CFR Part 93,) and Idaho State Administrative Procedures (IDAPA 58-0101-9902).

Criteria:

1. Exempt Projects: (Applicable to both CO and PM_{10})
   Project types **identified as being exempt from air quality analysis per 40 CFR 93.126 (See Attachment C)**.

2. Level of Service: (Applicable to CO only)
   Projects for which the **design year traffic volume will result in an operational level of service (LOS) of "C" or better** for any intersection in or directly affected by the project.

3. Traffic Volume: (Applicable to CO only)
   Projects for which **the design year two way, 24 hour forecast traffic volume for any roadway in or directly affected by the project** does not exceed the following:

   a. Northern Ada County CO Nonattainment Area: 20,000 vehicles per day*

   b. Remainder of the State: 15,000 vehicles per day*

   * Traffic volume forecasts utilized for screening purposes are to be obtained only from ITD. ITD District Offices can request traffic volume information and forecasts directly from ITD Transportation Planning Division-Traffic Survey and Analysis Section. This section will coordinate with metropolitan planning organizations as necessary to provide the appropriate traffic volumes and forecasts. The higher threshold traffic volume for the Northern Ada County CO Nonattainment area is reflective of the vehicle Inspection and Maintenance program controls in effect there.

Projects satisfying one or more of the above criteria will not require a project level analysis. Recommended narrative to discuss projects of this type in the NEPA document is provided in the "Documentation" section of this guidance.

A detailed explanation of the underlying assumptions and procedures through which the above criteria were established are attached (**See Attachment D)**.

ANALYSIS GUIDANCE

Projects failing to satisfy the previously described screening criteria will warrant a project level analyses for CO utilizing both the MOBILE5b emissions model (see note following) and the CAL3QHC dispersion model. This analysis should be conducted for the current year and the design year of the project.

In an effort to simplify the analysis process as well as to improve the accuracy and consistency of the results, this section provides an outline of procedures, assumptions and input values to be used in Idaho.

As noted previously, owing to the absence of models or methodologies for project level PM_{10} analysis, no such analysis will be expected for PM_{10}. Recommended narrative to discuss projects of this type in the NEPA document is provided in the "Documentation" section of this guidance. Therefore, no further discussion if PM_{10} is included in this section.

NOTE: During the preparation of this guidance document, the release of MOBILE6 was underway. The U.S. Environmental Protection Agency intends to publish a notice of availability in the Federal Register to announce the release of the final version of MOBILE6 in 2001. The effective date of that Federal Register notice marks the start of a two-year conformity grace period. Conformity determinations for transportation projects may be based on a MOBILE5 analysis if it was begun before or during the grace period, and if the final project NEPA document is issued no more than three years after the issuance of the draft project NEPA document (40 CFR 93.111(c)). When the grace period ends, MOBILE6 will become the only approved motor vehicle emissions model for transportation conformity purposes. Prior to the end of the grace period, ITD, FHWA and IDEQ will undertake a revision of this document to reflect such changes, additions and deletions.

Emission Factors Modeling

MOBILE5b is used to establish emission factors representative of the roadway, traffic and environmental conditions anticipated for the project under consideration. An outline of the input values and file structures recommended for Idaho is provided in **Attachment E**. Input values are provided for both Boise and "other" in recognition of characteristics unique to the Boise CO nonattainment area; particularly the I/M and anti-tampering programs.

The specific output from the MOBILE5b model to be used in the dispersion modeling process are the Composite CO Emission Factor (gm/mi) and the Idle Emission Factor (gm/hr). In the event that the MOBILE5b model is run for various analysis years and/or speeds, it is important to ensure that the emission factors used are those corresponding to the year and speed assumed in the dispersion modeling analysis.

Further explanation of the model and the function and inputting procedures for the model parameters can be found in Chapter 2 of EPA's User Guide to MOBILE5b.

Dispersion Modeling

CAL3QHC is used to project the concentration of pollutants at specified locations potentially impacted by existing and proposed transportation facilities. Owing to the high concentration of vehicles at intersections and the associated higher emissions factors at low speeds, it has been found that intersections are the critical locations for emissions concentrations and impacts. Furthermore, since CO concentrations typically increase with the traffic volume and congestion, the focus of the analysis should be based on what is judged to be the most congested intersection in or directly affected by the project.

The sequence for assessing project level CO is as follows:

1. Identify the most congested intersection within or directly affected by the project. Determine whether CO concentrations for this intersection are forecast to stay within the NAAQS for all analysis years (current year and design year). If this test is satisfied no further analysis is necessary.

2. If CO concentrations in the initial analysis are forecast to exceed the NAAQS for any of the analysis years in the project area, additional sites of high traffic congestion (and exceeding the previously discussed screening criteria) should also be assessed to establish the extent of the project's air quality impacts to the immediate area.

3. For those locations in which the analysis forecasts CO concentrations in excess of the NAAQS, an analysis of the No-Build alternative should be conducted for the same analysis years.

The specific sites analyzed for emissions are referred to as receptors. As a general rule, receptors should be located where the maximum total project concentration is likely to occur and where the general public is likely to have access. Examples of reasonable receptor sites include:

1. Sidewalks;

2. Vacant lots adjacent to intersections;

3. Parking lots; and

4. Sensitive buildings and properties, such as residences, hospitals, nursing homes, schools, and playgrounds.

In addition to locating a receptor adjacent to the actual intersection, receptors should also be located at intervals of 25 meters to mid-block (or the end of the predicted intersection queue as appropriate). Furthermore, owing to limitations of the modeling process, the receptors should be located no closer than the edge of the mixing zone (3.01 meters outside the traveled way).

Recommended Idaho-specific input values for CAL3QHC are provided in **Attachment F**.

Further guidance on the dispersion model input values can be found in EPA's User's Guide to CAL3QHC Version 2.0 (EPA-454/R-92-006) and EPA's Guideline For Modeling Carbon Monoxide From Roadway Intersections (EPA-454/R-92-005).

MITIGATION CONSIDERATIONS

Project level air quality mitigation should be considered for projects demonstrated to have a potential for adverse impacts on air quality. For projects in which the CO concentrations are predicted to exceed the NAAQS, specific mitigation measures should be identified for consideration. For projects in which the CO concentrations are predicted to exceed both the NAAQS and the predicted concentrations for the No-Build scenario, mitigation measures should be identified and implemented wherever feasible.

Specific project level CO mitigation measures to consider include:

1. Design configuration changes (e.g., adding or deleting turn lanes or medians, realignment, etc.)

2. Roadway system changes (e.g., one way couplets versus two way streets, etc.).

3. Operational changes (e.g., signal coordination improvements. etc.)

For projects having a potential to generate high levels of PM_{10} during construction operations, particularly, those located within PM_{10} air quality nonattainment areas and IDEQ areas of concern, measures to control PM_{10} should be identified and implemented wherever feasible.

Specific project level PM_{10} measures to consider during construction operations include:

1. Watering requirements.

2. Re-vegetation requirements.

3. Burning restrictions.

4. Hauling restrictions and requirements.

5. Plant (asphalt, cement, crushing, etc.) operation restrictions.

6. Street sweeping.

DOCUMENTATION

Upon completing the assessment of the potential air quality impacts of a transportation project, the findings, along with any proposed or committed mitigation measures are to be documented in the project NEPA document. Recommended levels of documentation and wording to be used are as follows:

Background Documentation:

For all projects the following statements should be provided as part of the project NEPA documentation:

"The project (is, is not) within a Federally designated air quality (nonattainment, maintenance) area for (CO and/or PM_{10})."

"The project (is, is not) within an IDEQ identified air quality area of concern for (CO and/or PM_{10})."

CO Documentation:

1. Screened Projects:

For projects satisfying one more of the screening criteria, no analysis is necessary and documentation in the NEPA document should be as outlined below. In the event that a project satisfies more than one screening criteria, documentation need only address the first criteria passed in the order shown:

a. Exempt Criteria (addresses both CO and PM_{10})

Consistent with 40 CFR 93.126 (Table 2, Exempt Projects), projects identified as being exempt from air quality analysis or consideration will, by their character, have minimal potential to impact air quality. Therefore no air quality analysis is warranted and no consideration of mitigation measures is necessary. Documentation for such projects can be limited to the following:

"The subject project has been identified as being exempt from air quality analysis in accordance with 40 CFR 93.126 (Table 2, Exempt Projects). It can therefore be concluded that the project will have no significant adverse impact on air quality."

b. LOS Criteria

Consistent with 40 CFR 93.123, projects identified as satisfying the LOS criteria are not forecast to experience traffic congestion levels resulting in CO concentrations exceeding the current NAAQS. Therefore, no air quality analysis is warranted and no consideration of mitigation measures is necessary. Documentation for such projects can be limited to the following:

"The subject project is forecast to experience traffic congestion levels of LOS C or better at all intersections within or directly affected by this project. It can therefore be concluded that the project will have nosignificant adverse impact on air quality as a result of CO emissions."

c. Volume Criteria

Projects within the Northern Ada County CO Nonattainment area for which the design year two way, 24 hour forecast traffic volume for any roadway in or directly affected by the project does not exceed 20,000 vehicles per day are not anticipated to experience CO concentrations exceeding the current NAAQS. Likewise, projects in the remainder of the state for which the design year two way, 24 hour forecast traffic volume for any roadway in or directly affected by the project does not exceed 15,000 vehicles per day are not anticipated to experience CO concentrations exceeding the current NAAQS. Documentation for such projects can be limited to the following:

"The subject project does not include or directly affect any roadways for which the twenty year forecast daily volume will exceed ("20,000 vehicles per day" for Northern Ada County and "15,000 vehicles per day" for the remainder of the state). It can therefore be concluded that the project will have no significant adverse impact on air quality as a result of CO emissions."

2. Analyzed Projects

For all projects in which an air quality analysis has been conducted, documentation in the NEPA document should be provided as outlined below. In addition, a tabular summary of results should be provided in the main body of the NEPA document. This table should include concentration levels by analysis year and scenario (build scenario and no-build scenario where called for), background levels, and the NAAQS. Finally a schematic of the analyzed intersections including peak hour traffic volumes, receptor sites and roadway dimensions should also be provided in the NEPA document. At the request of FHWA, the complete analysis shall be provided either as a separate technical report or as an appendix to the NEPA document.

a. Projects Satisfying the NAAQS Criteria

For projects in which the project level air quality analysis forecasts the CO concentrations to be less than the NAAQS (35 ppm 1-hour; 9 ppm 8-hours), no consideration of mitigation measures is necessary. The documentation can be limited to the following:

"A project level air quality analysis for CO has been conducted for the subject project and no receptor sites are forecast to experience concentrations in excess of the current 1-hour or 8-hour NAAQS. It can therefore be concluded that the project will have no significant adverse impact on air quality as a result of CO emissions."

b. Projects Satisfying the Build/No-Build Criteria

For projects in which the project level air quality analysis forecasts the CO concentrations to be greater than the NAAQS but less than the No-Build scenario, discussion of the analysis outcome along with consideration of mitigation measures should be provided. Appropriate documentation for this situation might read as follows:

"A project level air quality analysis of CO has been conducted for the subject project and has forecast that the following receptor sites may experience concentrations in excess of the current 1-hour or 8-hour NAAQS."

Provide summary of results in the project NEPA documentation.

"For the receptor sites in which the CO concentrations are forecast to exceed the NAAQS, a comparison with the No-Build scenario forecasts the CO concentrations for the proposed project to be less than for the No-Build scenario."

Provide a description of location(s) forecast to have CO concentrations in excess of the NAAQS in the project NEPA documentation.

Discuss the potential adverse impacts on the location(s) forecast to have CO concentrations in excess of the NAAQS in the project NEPA documentation.

"Mitigation measures to consider for the purpose of reducing the forecast CO concentrations include the following:"

List project specific mitigation measures and their estimated benefits in the project NEPA documentation.

c. Failure to Meet either Standard or Build/No-Build Criteria

For projects in which the project level analysis forecasts the CO concentrations to be greater than both the NAAQS and the No-Build scenario, discussion of the analysis outcome along with commitments to specific mitigation measures should be provided. Appropriate documentation for this situation might read as follows:

"A project level air quality analysis of CO has been conducted for the subject project and has forecast that the following receptor sites may experience concentrations in excess of the current 1-hour or 8-hour NAAQS."

Provide summary of results in the project NEPA documentation.

"For the receptor sites forecast to exceed the NAAQS, a comparison with the No-Build scenario finds that the concentrations under the Build scenario will exceed those of both the NAAQS and the No-Build scenario."

Provide a description of location(s) forecast to have CO concentrations in excess of the NAAQS in the project NEPA documentation.

Discuss the potential adverse impacts on the location(s) forecast to have CO concentrations in excess of the NAAQS in the project NEPA documentation.

"Mitigation measures to consider for the purpose of reducing the forecast CO concentrations include the following:"

List project specific mitigation measures and their estimated benefits in the project NEPA documentation.

PM_{10} Documentation:

1. Screened Projects:

   Exempt Projects (addresses both CO and PM_{10}):

   Consistent with 40 CFR 93.126 (Table 2, Exempt Projects), projects identified as being exempt from air quality analysis or consideration will, by their character, clearly have minimal potential to impact air quality. Therefore no air quality analysis is warranted and no consideration of mitigation measures is necessary. Documentation for such projects can be limited to the following:

   "The subject project has been identified as being exempt from air quality analysis in accordance with 40 CFR 93.126 (Table 2, Exempt Projects). It can therefore be concluded that the project will have no significant adverse impact on air quality."

2. Other Projects:

   As noted previously, there is no analysis model or methodology for project level PM_{10} analysis.

   The documentation should acknowledge this fact and identify any proposed or committed mitigation measures as follows:

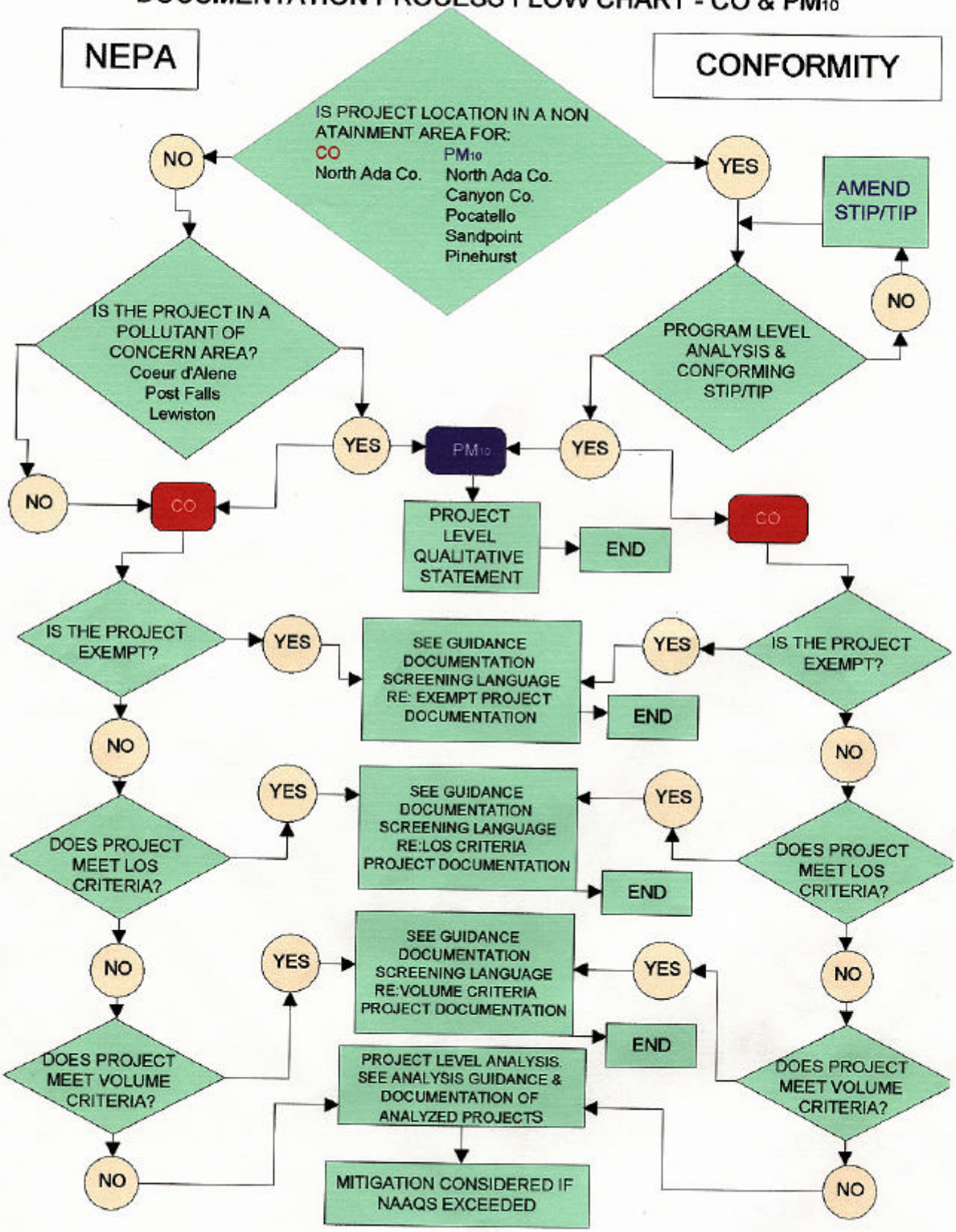
   "There are currently no EPA approved models or methodology available to analyze individual projects for their potential to cause or contribute to PM_{10} concentrations. Emissions due to the construction operations for this project will be mitigated by implementation of the following best practices measures:"

   List project specific mitigation measures in the project NEPA document.

ATTACHMENT A

IDAHO'S AIR QUALITY ANALYSIS: PROCESS FLOW CHART

PROJECT LEVEL AIR QUALITY SCREENING ANALYSIS & DOCUMENTATION PROCESS FLOW CHART - CO & PM_{10}



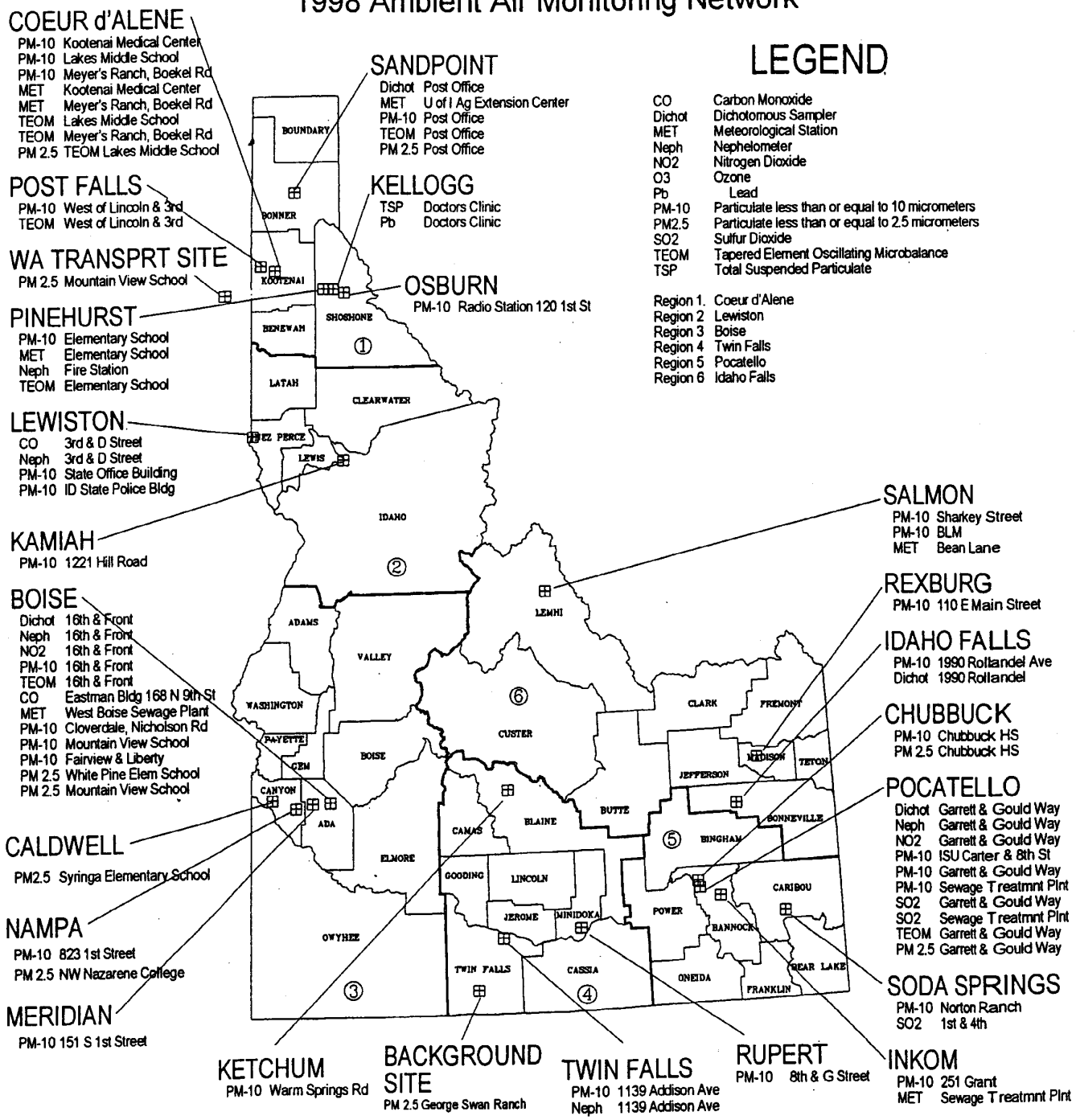
ATTACHMENT B

IDAHO'S 1998 AMBIENT AIR MONITORING NETWORK

Figure 1

IDAHO

1998 Ambient Air Monitoring Network



ATTACHMENT C

PROJECT TYPES EXEMPT FROM AIR QUALITY ANALYSIS

prior to a positive conformity determination, and that project sponsors must comply with such commitments.

(d) If the MPO or project sponsor believes the mitigation or control measure is no longer necessary for conformity, the project sponsor or operator may be relieved of its obligation to implement the mitigation or control measure if it can demonstrate that the applicable hot-spot requirements of § 93.116, emission budget requirements of § 93.118, and emission reduction requirements of § 93.119 are satisfied without the mitigation or control measure, and so notifies the agencies involved in the interagency consultation process required under § 93.105. The MPO and DOT must find that the transportation plan and TIP still satisfy the applicable requirements of §§ 93.118 and/or 93.119 and that the project still satisfies the requirements of § 93.116, and therefore that the conformity determinations for the transportation plan, TIP, and project are still valid. This finding is subject to the applicable public consultation requirements in § 93.105(e) for conformity determinations for projects.

§ 93.126 Exempt projects.

Notwithstanding the other requirements of this subpart, highway and transit projects of the types listed in Table 2 of this section are exempt from the requirement to determine conformity. Such projects may proceed toward implementation even in the absence of a conforming transportation plan and TIP. A particular action of the type listed in Table 2 of this section is not exempt if the MPO in consultation with other agencies (see § 93.105(c)(1)(iii)), the EPA, and the FHWA (in the case of a highway project) or the FTA (in the case of a transit project) concur that it has potentially adverse emissions impacts for any reason. States and MPOs must ensure that exempt projects do not interfere with TCM implementation. Table 2 follows:

TABLE 2—EXEMPT PROJECTS

Safety

Railroad/highway crossing.
Hazard elimination program.
Safer non-Federal-aid system roads.
Shoulder improvements.
Increasing sight distance.
Safety improvement program.
Traffic control devices and operating assistance other than signalization projects.
Railroad/highway crossing warning devices.
Guardrails, median barriers, crash cushions.
Pavement resurfacing and/or rehabilitation.
Pavement marking demonstration.
Emergency relief (23 U.S.C. 125).
Fencing.
Skid treatments.
Safety roadside rest areas.
Adding medians.
Truck climbing lanes outside the urbanized area.
Lighting improvements.
Widening narrow pavements or reconstructing bridges (no additional travel lanes).
Emergency truck pullovers.

Mass Transit

Operating assistance to transit agencies.
Purchase of support vehicles.
Rehabilitation of transit vehicles[1].
Purchase of office, shop, and operating equipment for existing facilities.
Purchase of operating equipment for vehicles (e.g., radios, fareboxes, lifts, etc.).
Construction or renovation of power, signal, and communications systems.
Construction of small passenger shelters and information kiosks.
Reconstruction or renovation of transit buildings and structures (e.g., rail or bus buildings, storage and maintenance facilities, stations, terminals, and ancillary structures).
Rehabilitation or reconstruction of track structures, track, and trackbed in existing rights-of-way.
Purchase of new buses and rail cars to replace existing vehicles or for minor expansions of the fleet[1].
Construction of new bus or rail storage/maintenance facilities categorically excluded in 23 CFR part 771.

Air Quality

Continuation of ride-sharing and van-pooling promotion activities at current levels.
Bicycle and pedestrian facilities.

Other

Specific activities which do not involve or lead directly to construction, such as:
Planning and technical studies.
Grants for training and research programs.
Planning activities conducted pursuant to titles 23 and 49 U.S.C.
Federal-aid systems revisions.
Engineering to assess social, economic, and environmental effects of the proposed action or alternatives to that action.
Noise attenuation.

Emergency or hardship advance land acquisitions (23 CFR 712.204(d)).
Acquisition of scenic easements.
Plantings, landscaping, etc.
Sign removal.
Directional and informational signs.
Transportation enhancement activities (except rehabilitation and operation of historic transportation buildings, structures, or facilities).
Repair of damage caused by natural disasters, civil unrest, or terrorist acts, except projects involving substantial functional, locational or capacity changes.

NOTE: [1]In PM_{10} nonattainment or maintenance areas, such projects are exempt only if they are in compliance with control measures in the applicable implementation plan.

§ 93.127 Projects exempt from regional emissions analyses.

Notwithstanding the other requirements of this subpart, highway and transit projects of the types listed in Table 3 of this section are exempt from regional emissions analysis requirements. The local effects of these projects with respect to CO or PM_{10} concentrations must be considered to determine if a hot-spot analysis is required prior to making a project-level conformity determination. These projects may then proceed to the project development process even in the absence of a conforming transportation plan and TIP. A particular action of the type listed in Table 3 of this section is not exempt from regional emissions analysis if the MPO in consultation with other agencies (see §93.105(c)(1)(iii)), the EPA, and the FHWA (in the case of a highway project) or the FTA (in the case of a transit project) concur that it has potential regional impacts for any reason. Table 3 follows:

TABLE 3—PROJECTS EXEMPT FROM REGIONAL EMISSIONS ANALYSES

Intersection channelization projects.
Intersection signalization projects at individual intersections.
Interchange reconfiguration projects.
Changes in vertical and horizontal alignment.
Truck size and weight inspection stations.
Bus terminals and transfer points.

§ 93.128 Traffic signal synchronization projects.

Traffic signal synchronization projects may be approved, funded, and implemented without satisfying the requirements of this subpart. However, all subsequent regional emissions analyses required by §§93.118 and 93.119 for transportation plans, TIPs, or projects not from a conforming plan and TIP must include such regionally significant traffic signal synchronization projects.

§ 93.129 Special exemptions from conformity requirements for pilot program areas.

EPA and DOT may exempt no more than six areas for no more than three years from certain requirements of this subpart if these areas are selected to participate in a conformity pilot program and have developed alternative requirements that have been approved by EPA as an implementation plan revision in accordance with §51.390 of this chapter. For the duration of the pilot program, areas selected to participate in the pilot program must comply with the conformity requirements of the pilot area's implementation plan revision for §51.390 of this chapter and all other requirements in 40 CFR parts 51 and 93 that are not covered by the pilot area's implementation plan revision for §51.390 of this chapter. The alternative conformity requirements in conjunction with any applicable state and/or federal conformity requirements must be proposed to fulfill all of the requirements of and achieve results equivalent to or better than section 176(c) of the Clean Air Act. After the three-year duration of the pilot program has expired, areas will again be subject to all of the requirements of this subpart and 40 CFR part 51, subpart T, and/or to the requirements of any implementation plan revision that was previously approved by EPA in accordance with §51.390 of this chapter.

[64 FR 13483, Mar. 18, 1999]

Subpart B—Determining Conformity of General Federal Actions to State or Federal Implementation Plans

SOURCE: 58 FR 63253, Nov. 30, 1993, unless otherwise noted.

ATTACHMENT D

EXPLANATION OF PROJECT SCREENING CRITERIA

Volume-based screening criteria have been developed to avoid having analyses conducted on intersections for which the forecast traffic volume and congestion are sufficiently low to assure that the CO concentrations will not exceed the NAAQS. The development of the volume criteria is based on extensive trial runs of the MOBILE5b and CAL3QHC models.

MOBILE5b

For the MOBILE5b model, input values used were as specified in the attached table, "MOBILE5b Input" **(See Attachment E)**. Consistent with the referenced table, separate tests were made for Boise conditions (including temperature, fleet composition, I/M program, and anti-tampering program) and non-Boise conditions. One distinction between the Boise and Non-Boise analysis input not reflected in the previously referenced tables was that of speed. Specifically, a speed of 27 MPH was used for Boise to be consistent with that for an urban principal arterial while a speed of 33 MPH was used for other than Boise (See Attachment E, Free Flow Speeds For Arterials).

Using the above input and assumptions, emissions factors were developed for Boise and non-Boise areas for the year 2025 as follows:

Freeflow Emission Factor = 19.0 g/mi Statewide (Boise and non-Boise)
Idle Emission Factor = 291 g/hr Boise
= 372 g/hr Non-Boise

CAL3QHC

For the CAL3QHC model, input values used were as specified in the table, "CAL3QHC Input" **(See Attachment F)**. Where judgment was necessary in selecting an input value the following choices were made:

Surface Roughness: **Office, 175 cm**
Stability Class: **E**
Traffic Volume: **A range of values was used.**
Cycle Length: **A range of 100 to 120 Seconds was used.**
Red Time: **Judgment was used to arrive at a best fit.**
One-Hour Background Concentration: **Use best estimate for statewide (2.6ppm) and Northern Ada County (1.7ppm). Use these values for current and design year model inputs.**

Two intersection designs were tested in the analysis. The first configuration consisted an intersection of two five-lane roadways (including a continuous left turn lane) with dual direction traffic. The second configuration consisted of an intersection of two three-lane roadways (including a continuous left turn lane) with dual direction traffic.

Results

Using the above inputs and assumptions and testing various volumes, it was concluded that for conditions assumed, an analysis would not forecast CO concentrations in excess of the NAAQS (35 ppm, 1 hour; 9 ppm, 8 hour) for roadways in which design year forecast volumes of less than 20,000 vehicles per day in Northern Ada County or 15,000 vehicles per day in the remainder of the state.

IDEQ Recommended Carbon Monoxide (CO) background concentrations for transportation analyses (ppm)

	Statewide		Boise		Nampa		Lewiston	
	1-hour	8-hour[a]	1-hour	8-hour[b]	1-hour	8-hour[c]	1-hour	8-hour[d]
Maximum	4.0	2.6	2.4	1.7	4.0	2.2	1.9	1.3
Minimum	1.9	1.2	0.9	0.6	1.4	0.8	0.4	0.3
Best Estimate	2.6	1.7	1.7	1.2	2.5	1.4	1.2	0.8

For statewide background, the best estimate value should be used for most sites. This represents a site with some industry in the area. If the location is a very rural area (i.e., no industry present) then the minimum value may be used. However, if the area has substantial industry present then the maximum value should be used. A justification should be presented if a value other than the best estimate is used. For Boise, Nampa, and Lewiston, the best estimate is the most appropriate value to use. The minimum or maximum should only be used in special cases (e.g., site is on the outskirts of the city). IDEQ Regional Office Air Quality Staff are responsible for providing the background concentration to contractors using this information. Please refer to Attachment G for the appropriate IDEQ Regional Office Air Quality Staff contact.

ATTACHMENT E

MOBILE5b INPUT				
FLAG	**DESCRIPTION**	**VALUE**		**COMMENTS**
		Boise	Other	
PROMPT	Input Prompt	2	2	2 = Prompt for input; 1 = no input prompting desired
IOUNEW	Program Outputs	N/A	N/A	Only used for mainframe version
PROJID	Descriptive Title	Var.	Var.	Variable name up to 80 characters
TAMFLG	Tampering Rates	1	1	1 = Default Rate
SPDFLG	Number of Speeds	1	1	1 = One average speed for all vehicles
VMFLG	VMT Mix	3	1	1 = Default Mix; 3 = One VMT mix specified for all scenarios
MYMRFG	Mileage and Registration Rates by Age	1	1	1 = Use Default Values
NEWFLG	Exhaust Emission Rates	1	1	1 = Use Default Values
IMFLAG	Inspection/Maintenance Program	2	1	1 = No IM Program Operating 2 = IM Program; MOBILE 5 Models Impact on Emissions
ALHFLG	Additional Correction Factor Inputs	1	1	1 = No Additional Correction Factors
ATPFLG	Anti-Tampering Program	2	1	1 = No ATP Assumed 2 = User Specified ATP
RLFLAG	Control of Refueling Losses	1	1	1 = No Controls Other than Required On-Board Vapor Recovery
LOCFLG	Local Area Parameters	2	2	One LAP Set for all Scenarios
TEMFLG	Temperature	2	2	Use Specified Ambient Temperature for Analysis
OUTFMT	Output Format	4	4	4 = 80 Column Output; Other Formats Available
PRTFLG	Emission Factor Options	User Choice	User Choice	Recommend 2 = CO Emission Factors Only; Other Options Available
IDLFLG	Idle Emissions Factors	User Choice	User Choice	Recommend 2 = Include Idle Emissions Factors
NMHFLG	Hydrocarbons	User Choice	User Choice	Recommend 2 = Non-Methane Hydrocarbon Factors
HCFLAG	Hydrocarbon Components	User Choice	User Choice	Recommend 1 = No Components Printed; No Affect if only CO Factors

BOISE VEHICLE MIX INPUT		
VEHICLE TYPE	**PERCENT OF FLEET**	**COMMENTS**
LDGV	.512	
LDGT1	.274	
LDGT2	.131	
HDGV	.004	
LDDV	.009	
LDDT	.015	
HDDV	.019	
MC	.036	

BOISE INSPECTION/MAINTENANCE PROGRAM INPUT		
VARIABLE	**VALUE**	**COMMENTS**
Program Start Year	84	Year program first begins to require both inspection and repairs (1984)
Stringency Level	27	Expected initial test failure rate for pre-1981 vehicles (min. 10%, max. 50%)
First Model Year	65	First model year for which program requires both inspection and repairs (1965)
Last Model Year	50	Newest model year for which program requires both inspection and repairs (2050)
Waver Rate: Pre-1981 Vehicles	07	Vehicles waved after satisfying dollar limit for repairs
Waver Rate: Post-1981 Vehicles	07	Vehicles waved after satisfying dollar limit for repairs
Compliance Rate	098	Level of compliance with inspection program (98%)
Program Type	1	Test only
Alternate Effectiveness Rates	1	Default values used
Inspection Frequency	1	Annually
Vehicle Types Subject to Inspection	2222	LDGV, LDGT1, LDGT2, and HDGV subject to inspection
Test Type	2	2500/Idle Test
Cut points	1	Default
I/M Credits	11	Default

BOISE ANTI-TAMPERING PROGRAM INPUT		
VARIABLE	**VALUE**	**COMMENTS**
Program Start Year	84	Year program first begins to require both inspection and repairs (1984)
First Model Year	81	First model year for which program requires both inspection and repairs (1981)
Last Model Year	50	Newest model year for which program requires both inspection and repairs (2050)
Vehicle Types Subject to Inspection	2222	LDGV, LDGT1, LDGT2, and HDGV subject to inspection
Program Type	1	Test only
Inspection Frequency	1	Annually
Compliance Rate	098	Level of compliance with inspection program (98%)
Inspections Performed	22212112	Air Pump System Yes Catalyst Yes Fuel Inlet Restrictor Yes Tailpipe Lead Deposit Test No EGR System Yes Evaporative Emission Control System No PCV System No Gas Cap Yes

LOCAL AREA PARAMETERS			
VARIABLE	**VALUE**		**COMMENTS**
	Boise	Other	
Scenario Name	User Choice	User Choice	Identifier Name (16 character field)
Fuel Volatility Class	E	E	Volatility and Oxygenation not actually considered therefore only space filler in file.
Minimum Temperature	User Choice	User Choice	Use 10-year average of monthly average minimum temperature for January. Value not important since analysis based on ambient temperature.
Maximum Temperature	User Choice	User Choice	Use 10-year average of monthly average maximum temperature for January. Value not important since analysis based on ambient temperature.
Period 1 RVP	9	9	Fuel volatility prior to future change in volatility. Value does not affect analysis for CO.
Period 2 RVP	9	9	Fuel volatility prior to future change in volatility. Value does not affect analysis for CO.
Period 2 Start Year	50	50	Period 2 RVP Start Year (2050). Value does not affect analysis for CO.

SCENARIO PARAMETERS			
VARIABLE	**VALUE**		**COMMENTS**
	Boise	Other	
Region	1	1	1 = Low Altitude (500 ft Elevation) 2 = High Altitude (5,500 ft Elevation)
Year	User Choice	User Choice	Calendar year being assumed in analysis. Include current year and design year.
Speed	User Choice	User Choice	Predicted non-intersection travel speed for roadway under consideration (does not reflect intersection queues).
Ambient Temperature	31.4	28.8	Based on 10-year average of January monthly average temperatures.
Operating Mode Fractions	20.6 27.3 20.6	20.6 27.3 20.6	Non-Catalyst Equipped Cold Start Catalyst Equipped Hot Start Catalyst Equipped Cold Start

ARTERIAL CLASS BY FUNCTION AND DESIGN CATEGORY (Reference: Highway Capacity Manual)		
Design Category	Principal Arterial	Minor Arterial
Suburban	I	II
Intermediate (Suburban/Urban)	II	III
Urban	III	III

FREE FLOW SPEEDS FOR ARTERIALS (Reference: Highway Capacity Manual)			
Arterial Class	I	II	III
Range of Free Flow Speeds (MPH)	35 to 45	30 to 35	25 to 30
Typical Free Flow Speeds (MPH)	40	33	27

Procedures for estimating roadway free flow speed:

1. Select design category and functional class to establish arterial class (Table 1).
2. Use arterial class to establish range of free flow speeds and typical speed (Table 2)

MOBILE5a and MOBILE5b Input File Structure

I/M Record Format:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
8	2		2	0		6	8		2	0		0	3		0	3		0	9	6		1	1	1		2	2	2	1		1	1	1	1	2	2	2	0	.	.	1	.	2	0		9	9	9	.

																			Compl. Rate										HDGV																				Nox Cutpoint	
																81+ Waiver Rate												LDGT2														CO Cutpoint							
												Pre-81 Waiver Rate																LDGT1												HC Cutpoint							
										Last (Newest) MY																	LDGV										Alternate I/M Credits (Tech iv+)									
																									Ann/Biennial										Alternate I/M Credits (Tech I-II)											
							First (Oldest) MY																	Alt Eff Flag										Non Default Cutpoints															
				Stringency Level for Pre-81 MY																			Program Type (TO/T&R)									Test Type (Idle, TSI, etc.)																	
Program Start Year																																																	

ATP Record Format:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
8	3		6	8		2	0		2	2	2	2		1	1		0	9	6	.		2	2	1	1	2	2	1	2

													HDGV													Tallpipe Pb																								
											LDGT2														Fuel Inlet																									
										LDGT1														Cat						Gas Cap																			
									LDGV															Air					PCV																				
							Last (Newest) MY												Compliance Rate									Evap																							
			First (Oldest) MY													Annual/Biennial									EGR																								
Program Start Year															Program Type (YO/T&R)																																			

Pressure/Purge Record Format:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
8	3		6	8		2	0		2	2	2	1		1	1		0	9	6	.

													HDGV																																							
												LDGT2																																							
											LDGT1																																								
										LDGV																																								
							Last (Newest) MY												Compliance Rate																																
			First (Oldest) MY													Annual/Biennial																																	
Program Start Year															Program Type (TO/T&R)																																			

MOBILE5a and MOBILE5b Input File Structure

Scenario Record Format:

```
1 2 3 4 5 6 7 8 9 1 0 1 1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 2 0 2 1 2 2 2 3 2 4 2 5 2 6 2 7 2 8 2 9 3 0 3 1 3 2
1   0 0   1 9. 6   8 6. 0 2 2 0. 6   2 7. 3   2 0. 6   7
```

- Evaluation Month
- Cold-Start Fraction - Cat Vehicles
- Amb Temp
- Hot-Start Fraction - Cat Vehicles
- Average Speed
- Calendar Year
- Cold-Start Fraction - Non-Cat Vehicles
- Region (1,2) or LEV Flag (3,4)

Local Area Parameter (LAP) Record Format:

```
1 2 3 4 5 6 7 8 9 1 0 1 1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 2 0 2 1 2 2 2 3 2 4 2 5 2 6 2 7 2 8 2 9 3 0 3 1 3 2 3 3 3 4 3 5 3 6 3 7 3 8 3 9 4 0 4 1 4 2 4 3 4 4 4 5 4 6 4 7 4 8 4 9
S c e n a r i o   N a m e       c / 7 2. 0/ 9 2. 0/ 1 0. 1/   8. 7 8 9 1 1 1 1
```

- RVP Period 2
- RVP Period 1
- Detergent Flag
- Max Daily Tempature
- RFG Flag
- Min Daily Temperature
- Diesel Fuel Flag s
- Oxy Fuel Flag
- Scenario Name
- Volatility Class
- Period 2 Start Year

Oxy Fuel Record Format:

```
1 2 3 4 5 6 7 8 9 1 0 1 1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 2 0 2 1
. 2 0 0 . 8 0 0. .   0 2 7. . 0 3 5 1
```

- RVP Waiver Flag
- Oxy Content of Alcohol Blends
- Oxy Content of Ether Blends
- Alcohol Blends Market Share
- Ether Blends Market Share

ATTACHMENT F

CAL3QHC INPUT		
VARIABLE	**VALUE**	**COMMENTS**
Meteorological Variables		
Averaging Time	60 min.	
Surface Roughness	User Choice	Open Fields (60-70 cm) 11 cm Orchards 198 cm Park 127 cm Fir Forest 283 cm Single Family Residential 108 cm Apartment Residential 370 cm Office 175 cm Central Business District 321 cm (Select value based on anticipated future condition (design year), not current condition.)
Settling Velocity	0 cm/sec	
Deposition Velocity	0 cm/sec	
Wind Speed	1 m/sec	
Multiple Wind Directions	Yes	
Wind Angle Increments	10 degrees	
First Increment Multiplier	0	
Last Increment Multiplier	35	
Stability Class	User Choice	Recommended values: Rural (more than half the land area is vegetation); E Urban (less than half the land area is vegetation); D (Select value based on anticipated future condition (design year), not current condition.)
Mixing Height	1000 M	
Meteorological Conditions	1	
Traffic Variables		
Traffic Volume	User Choice	Peak Hour Volume. Use total link volume for free-flow links. Use link volume specific to individual movements for queue links.
Traffic Speed	User Choice	Predicted non-intersection travel speed for roadway under consideration (does not reflect intersection queues).
Average Cycle Length	User Choice	Recommend 100 to 120 Seconds
Average Red Time	User Choice	Red time corresponding to each phase
Clearance Lost Time	User Choice	Recommend 2 seconds
Saturation Flow Rate	User Choice	Recommend 1600 vehicles per hour green (vphg) as default
Signal Type	User Choice	Recommend Semi-actuated (3)

CAL3QHC INPUT (continued)		
VARIABLE	**VALUE**	**COMMENTS**
Site Variables		
Free Flow/Queue link	User Choice	Free flow links 1 Queue Links 2
Mixing Width	User Choice	Width of lane(s) being analyzed plus 10 feet each side for free flow links. Width of lane(s) being analyzed for queue links.
Lanes	User Choice	Number of lanes for each link
Link Coordinates	User Choice	Queue links begin at stop bar. Free flow links start at midpoint of intersection.
Source Height	0 M	
Receptor Height	User Choice	Recommend 1.8 M for most situations
Receptor Location	User Choice	Use midpoint of sidewalk but do not locate within mixing width.
Emission Variables:		
Free flow Emission Factor	User Choice	Based on MOBILE5B Output
Idle Emission Factor	User Choice	Based on MOBILE5B Output
Background Concentration (1 hour) PPM	See table following	Use appropriate best estimate one-hour background value from table below. Use location-specific values for projects where available. Use statewide values elsewhere.
Persistence Factor	0.7	

IDEQ Recommended Carbon Monoxide (CO) background concentrations for transportation analyses (ppm)								
	Statewide		Boise		Nampa		Lewiston	
	1-hour	8-hour[a]	1-hour	8-hour[b]	1-hour	8-hour[c]	1-hour	8-hour[d]
Maximum	4.0	2.6	2.4	1.7	4.0	2.2	1.9	1.3
Minimum	1.9	1.2	0.9	0.6	1.4	0.8	0.4	0.3
Best Estimate	2.6	1.7	1.7	1.2	2.5	1.4	1.2	0.8

For statewide background, the best estimate value should be used for most sites. This represents a site with some industry in the area. If the location is a very rural area (i.e., no industry present) then the minimum value may be used. However, if the area has substantial industry present then the maximum value should be used. A justification should be presented if a value other than the best estimate is used. For Boise, Nampa, and Lewiston, the best estimate is the most appropriate value to use. The minimum or maximum should only be used in special cases (e.g., site is on the outskirts of the city). IDEQ Regional Office Air Quality Staff are responsible for providing the background concentration to contractors using this information. Please refer to Attachment G for the appropriate IDEQ Regional Office Air Quality Staff contact.

ATTACHMENT G: LIST OF CONTACTS

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